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MEMORANDUM

DATE: June 30, 2015

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-4 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, John Day Vapor Response Site, John Day, Oregon**

REF: TDD: 15-05-0005 PAN: 1004530.0004.111.02

The data quality assurance review of 4 soil and 7 water samples collected from the John Day Vapor Response site in John Day, Oregon, has been completed. Gasoline range organics analysis (Ecology Method NWTPH-Gx) was performed by TestAmerica, Inc., Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2B and/or 4 Data Validation Electronic and/or Manual Process (S2B/4VE/M).

The samples were numbered:

15053114	15053115	15053116	15053505	15053506
15053507	15053508	15053601	15053602	15053603
15053604				

Data Qualifications:

1. Sample Holding Times: Satisfactory.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 1, 2015, and were analyzed on June 9, 2015, therefore generally meeting QC criteria of less than 48 between collection and lab preservation for soil samples (7 days for unpreserved water samples). Soil samples 15053505 and 15053506 were received and prepared at the laboratory more than 48 hours after collection, therefore exceeding preparation holding times; associated sample results were qualified as estimated quantities with a low bias (JL or UJL).

2. Initial Calibration: Acceptable.

Calculations were verified as correct. All relative percent differences (RPDs) were less than or equal to the laboratory control limits.

3. Continuing Calibration: Acceptable.

Calculations were verified as correct. All percent differences were less than or equal to the laboratory control limits.

4. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Satisfactory.

A method blank was analyzed at the required frequency of every 12 hours for each matrix, preparation technique, and analysis system. Gasoline-range TPHs was detected at 0.779 mg/kg in the method blank; associated positive results less than five times the method blank result were qualified as not detected (U).

6. System Monitoring Compounds (SMC): Satisfactory.

All recoveries of the SMCs were greater than 10% and within QC criteria except the high 4-bromofluorobenzene recovery in sample 15053505; associated positive results were qualified as estimated with a high bias (JH).

7. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

8. Blank Spikes: Acceptable.

Blank spike results were within laboratory QC limits.

9. Duplicates: Acceptable.

Laboratory spike duplicate results were within laboratory QC limits.

10. Quantitation and Quantitation Limits: Acceptable.

Sample quantitation and sample quantitation limits were correctly calculated.

11. Laboratory Contact: Not Required.

No laboratory contact was required.

12. Overall Assessment of Data for Use

When more than one bias qualifier was applied to a result, the validator used professional judgment to apply only one bias qualifier.

The overall usefulness of the data is based on the criteria outlined in the site-specific sampling plan Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical method. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: **15053114**

Lab Sample ID: 580-50404-1
Client Matrix: Water

Date Sampled: 06/01/2015 1053
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191644	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1743			Injection Volume:	5 mL
Prep Date:	06/09/2015 1743			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	9.6		0.027	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	123		50 - 150
Trifluorotoluene (Surr)	108		50 - 150

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Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: **15053115**

Lab Sample ID: 580-50404-2
Client Matrix: Water

Date Sampled: 06/01/2015 1626
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191512	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/08/2015 1955			Injection Volume:	5 mL
Prep Date:	06/08/2015 1955			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.027 U	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	97		50 - 150
Trifluorotoluene (Surr)	90		50 - 150

MW 6-30-15

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053116

Lab Sample ID: 580-50404-3
Client Matrix: Water

Date Sampled: 06/01/2015 2020
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191512	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/08/2015 2028			Injection Volume:	5 mL
Prep Date:	06/08/2015 2028			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.027 U	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	86		50 - 150

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Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053505

Lab Sample ID: 580-50404-4
Client Matrix: Solid

% Moisture: 5.8

Date Sampled: 06/01/2015 1010
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191653	Instrument ID:	TAC056
Prep Method:	5035	Prep Batch:	580-191660	Initial Weight/Volume:	6.262 g
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1841			Injection Volume:	5 mL
Prep Date:	06/03/2015 1200			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		4900	JK ~~HB~~ MW	4.9	39

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	191	X	50 - 150

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Client: Ecology and Environment, Inc. Job Number: 580-50404-1

Client Sample ID: 15053506

Lab Sample ID: 580-50404-5 Date Sampled: 06/01/2015 1144
Client Matrix: Solid % Moisture: 23.9 Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191653	Instrument ID:	TAC056
Prep Method:	5035	Prep Batch:	580-191660	Initial Weight/Volume:	4.795 g
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1708			Injection Volume:	5 mL
Prep Date:	06/03/2015 1200			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		1.9 UJL	~~J H B~~	0.84	6.7

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	95		50 - 150

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Client: Ecology and Environment, Inc. Job Number: 580-50404-1

Client Sample ID: 15053507

Lab Sample ID: 580-50404-6 Date Sampled: 06/01/2015 1238
Client Matrix: Solid % Moisture: 8.0 Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191653	Instrument ID:	TAC056
Prep Method:	5035	Prep Batch:	580-191660	Initial Weight/Volume:	5.358 g
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1739			Injection Volume:	5 mL
Prep Date:	06/03/2015 1200			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		ND		0.55 U	4.4

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	95		50 - 150

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Client: Ecology and Environment, Inc. Job Number: 580-50404-1

Client Sample ID: **15053508**

Lab Sample ID: 580-50404-7 Date Sampled: 06/01/2015 1430
Client Matrix: Solid % Moisture: 7.9 Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191653	Instrument ID:	TAC056
Prep Method:	5035	Prep Batch:	580-191660	Initial Weight/Volume:	4.672 g
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1810			Injection Volume:	5 mL
Prep Date:	06/03/2015 1200			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		ND		0.62 U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	96		50 - 150

MW 6-30-15

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: **15053601**

Lab Sample ID: 580-50404-8
Client Matrix: Water

Date Sampled: 06/01/2015 1410
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191644	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/09/2015 1816			Injection Volume:	5 mL
Prep Date:	06/09/2015 1816			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.13		0.027	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	100		50 - 150

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: **15053602**

Lab Sample ID: 580-50404-9
Client Matrix: Water

Date Sampled: 06/01/2015 1600
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191512	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/08/2015 2100			Injection Volume:	5 mL
Prep Date:	06/08/2015 2100			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.027 U	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	97		50 - 150
Trifluorotoluene (Surr)	80		50 - 150

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: **15053603**

Lab Sample ID: 580-50404-10
Client Matrix: Water

Date Sampled: 06/01/2015 1650
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191512	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/08/2015 2133			Injection Volume:	5 mL
Prep Date:	06/08/2015 2133			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.84		0.027	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	96		50 - 150

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Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053604

Lab Sample ID: 580-50404-11
Client Matrix: Water

Date Sampled: 06/01/2015 1810
Date Received: 06/03/2015 0925

NWTPH-Gx Northwest - Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Gx	Analysis Batch:	580-191512	Instrument ID:	SEA006
Prep Method:	5030B		N/A	Initial Weight/Volume:	5 mL
Dilution:	1.0			Final Weight/Volume:	5 mL
Analysis Date:	06/08/2015 2205			Injection Volume:	5 mL
Prep Date:	06/08/2015 2205			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.027 U	0.050

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	87		50 - 150

6-30-15